Apple II
Technical Notes

Developer Technical Support

Mouse
#7:   Mouse Clamping

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This Technical Note describes the different methods available for obtaining mouse clamping values on different Apple II family machines.

AppleMouse Card

The AppleMouse card delivers clamping values on request. There is no specific mouse routine to obtain the clamping values, but an internal routine may be used by the mouse card to return them. The values are returned as minimum and maximum values of X and Y clamps, both low and high bytes.

Note: The following code is the **only** supported use of the $Cn1A offset into the mouse card firmware, and this entry point is not available in any other mouse firmware implementation.

```
GetClamp     LDA    #$4E
             STA    $478               ;Needed by Mouse Card firmware
             LDA    #$00
             STA    $4F8               ;Needed by Mouse Card firmware
             STA    Tmp                ;Zero-page word for indirect addressing
             LDA    #CN                ;$C<slot>, obtained prior to this rtn
             STA    Tmp+1              ;$C<slot>00, Mouse Card firmware main entry
             STA    ToCard+2
             LDY    #$1A
             LDA    (Tmp),Y
             STA    ToCard+1           ;Mouse Card firmware GetClamp entry
             LDA    #7
             STA    BytePtr
             LDY    #N0                ;$<slot>0, for Mouse Card firmware
GetByte      LDX    #CN                ;$C<slot>, for Mouse Card firmware
             LDA    #0                 ;Needed by Mouse Card firmware
             JSR    ToCard
             LDA    $578               ;Clamp byte returned by Mouse Card firmware
             LDX    BytePtr
             STA    Byte,X
             DEC    $478
             DEX
             STX    BytePtr
             BPL    GetByte
             RTS
ToCard       JMP    $0000              ;Operand modified by rtn
```

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```
Byte          DS    8,0
              ;MinXH,MinYH,MinXL,MinYL,MaxXH,MaxYH,MaxXL,MaxYL
BytePtr       DS    1,0
```

Apple IIc

For the Apple IIc, you can get clamping values by reading the following auxiliary memory screen holes:

$47D	MinXL	$67D	MaxXL
$4FD	MinYL	$6FD	MaxYL
$57D	MinXH	$67D	MaxXH
$5FD	MinYH	$6FD	MaxYH

Apple IIGS

On the Apple IIGS, the Miscellaneous Tool Set call `GetMouseClamp` returns the mouse clamp values as four words on the stack. This call is documented in the *Apple IIGS Toolbox Reference*, Volume 1.

Further Reference

- *Apple IIGS Toolbox Reference*, Volume 1